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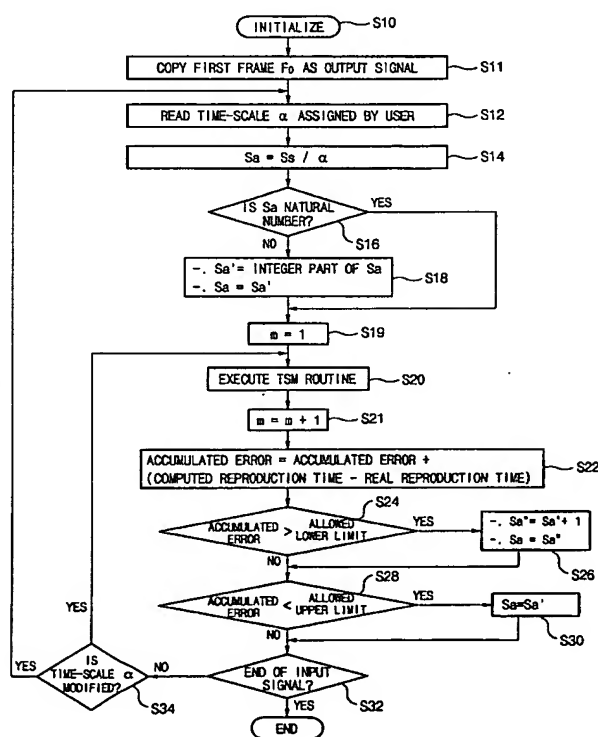
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(54) Title: TIME-SCALE MODIFICATION METHOD FOR DIGITAL AUDIO SIGNAL AND DIGITAL AUDIO/VIDEO SIG-
NAL, AND VARIABLE SPEED REPRODUCING METHOD OF DIGITAL TELEVISION SIGNAL BY USING THE SAME
METHOD



(57) Abstract: **Problem:** A method capable of ensuring a syn-
chronization between an audio signal and a video signal both of
which are modified in time-scale is needed. **Solution:** When anal-
ysis shift $S_a = S_s / \alpha$, where S_s is synthesis shift and α is a desig-
nated time-scale (variable speed ratio), has a decimal value, two
natural numbers which are nearest to the decimal value are se-
lected as a modified analysis shift S_a' and a compensated analysis
shift S_a'' , respectively. In time-scale modification of source audio
samples to vary playback speed by dividing them into overlapped
successive analysis windows, the modified analysis shift S_a' and
the compensated analysis shift S_a'' are alternately applied when-
ever a predetermined condition is met. The time difference be-
tween an estimated playback time and a real playback time of the
time-scale modified audio signal is accumulated. The case that the
predetermined condition is met is a case than an accumulated time
difference goes beyond an upper threshold or a lower threshold of
an allowed error range. In a processing of varying the play-
back speed of an AV signal, if a real variable speed ratio of a play-
back-speed-varied video signal is given as a target variable speed
ratio of an audio signal to vary the playback speed of the audio
signal, a synchronization between the video signal and the audio
signal can be obtained. By applying this technology to the digital
TV or TV phone, consecutive watch of the broadcasting signal for
a phone-break time is possible. Catch-up for the currently received
broadcasting signal is also possible through a high speed playback
mode after a low speed playback mode initiated from a time of the
past or the present.



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